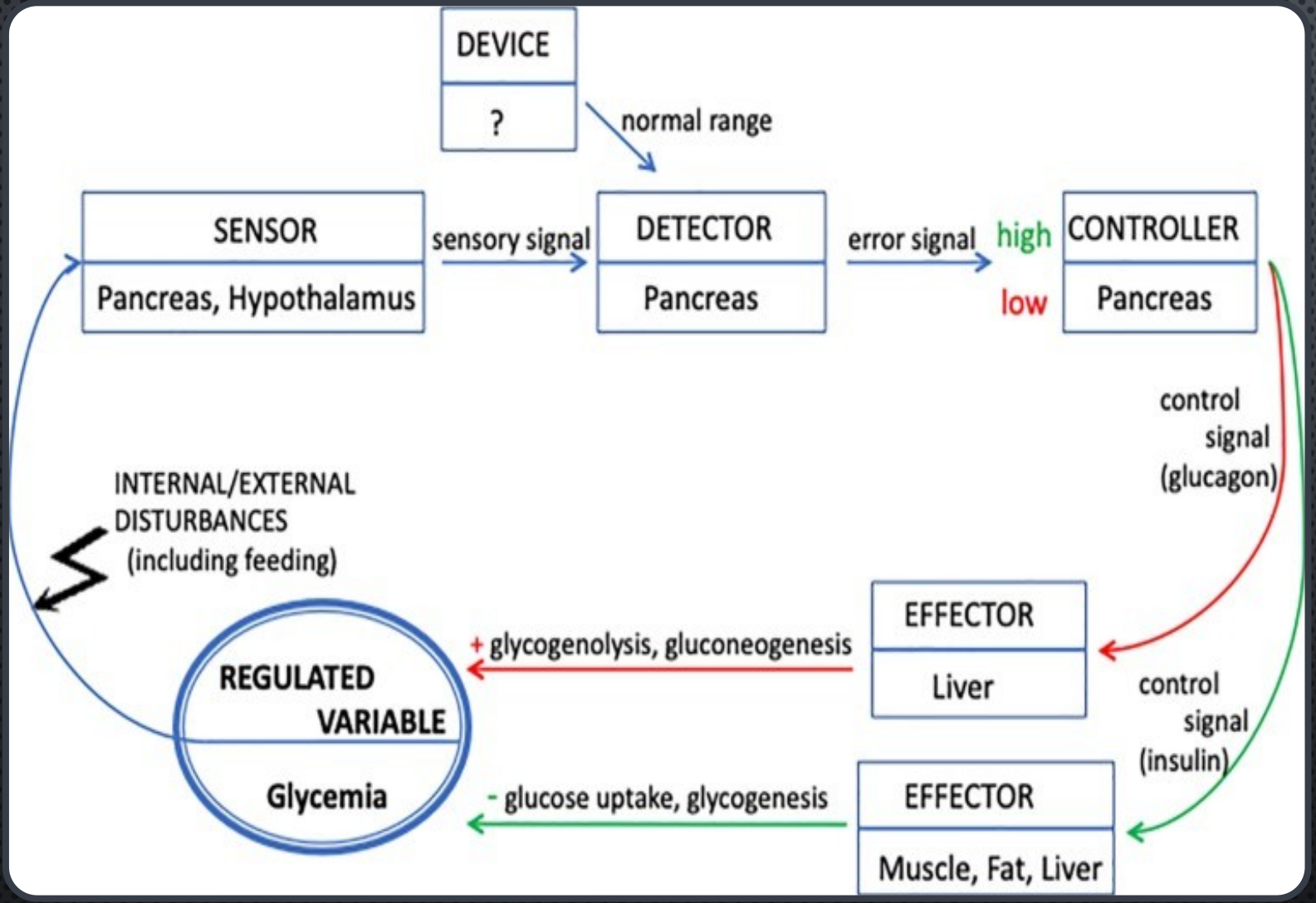
FACULTÉ DE PHARMACIE DE MONASTIR

3ème ANNÉE

MODÈLE DE DIABÈTE TYPE 2 INDUIT PAR LA STREPTOZOTOCINE CHEZ LE RAT

ÉLABORÉ PAR OUMAYMA ABIDI



RÉGULATION DE LA GLYCÉMIE

MÉCANISMES DE DYSFONCTIONNEMENT :

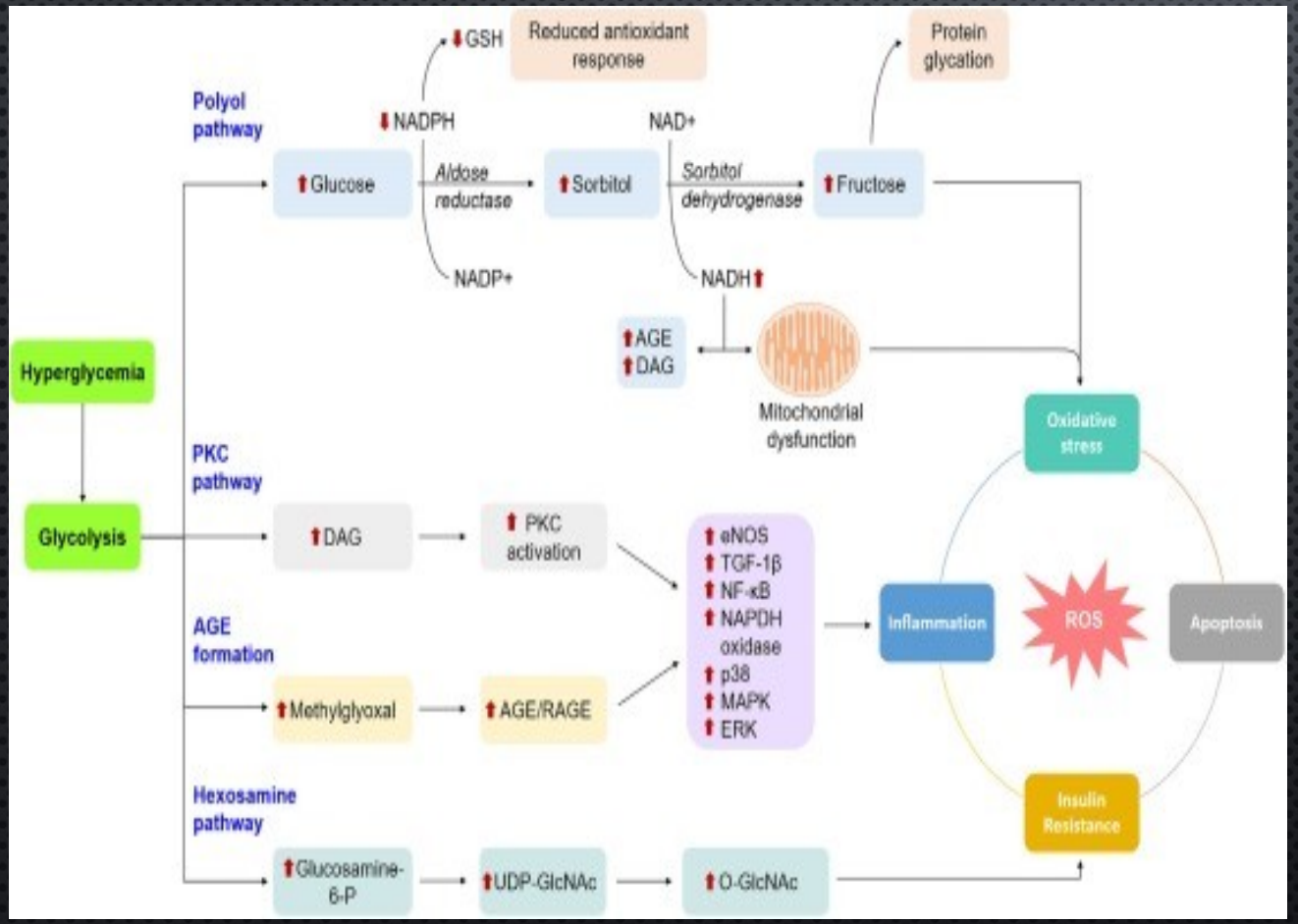


Fig. 1 : signaux mis en jeu

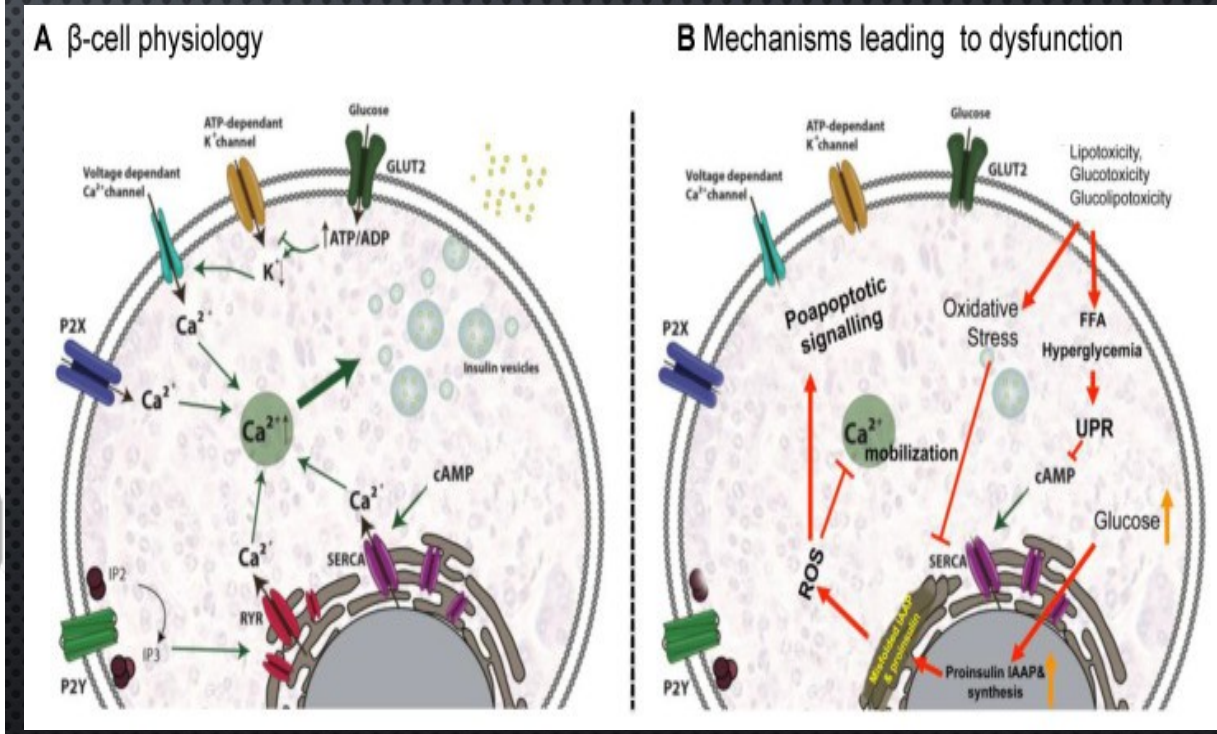
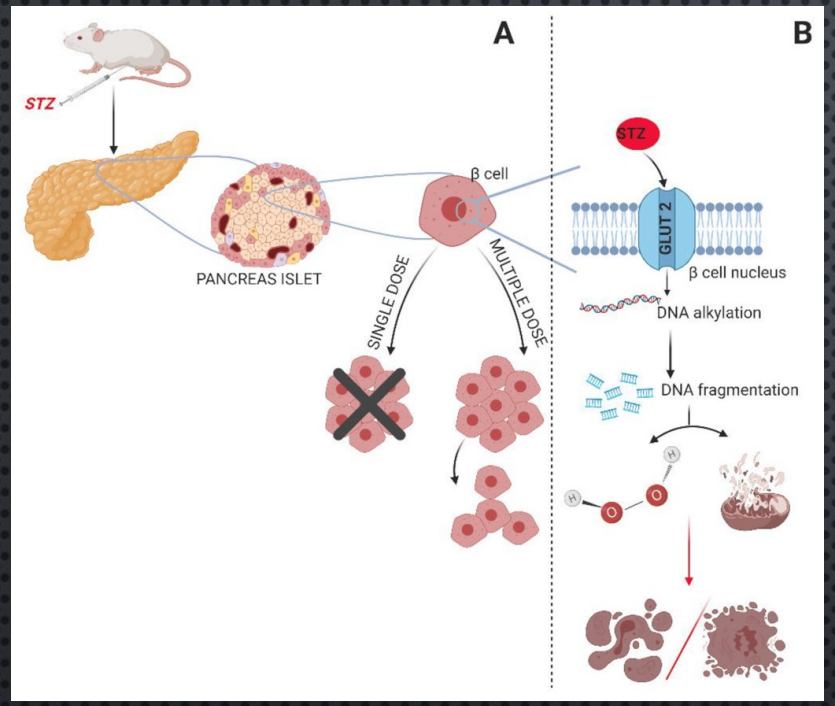


Fig. 2 : comparaison entre l'état normal et le diabète



A : protocole expérimental
B : effet de la STZ sur la cellule beta

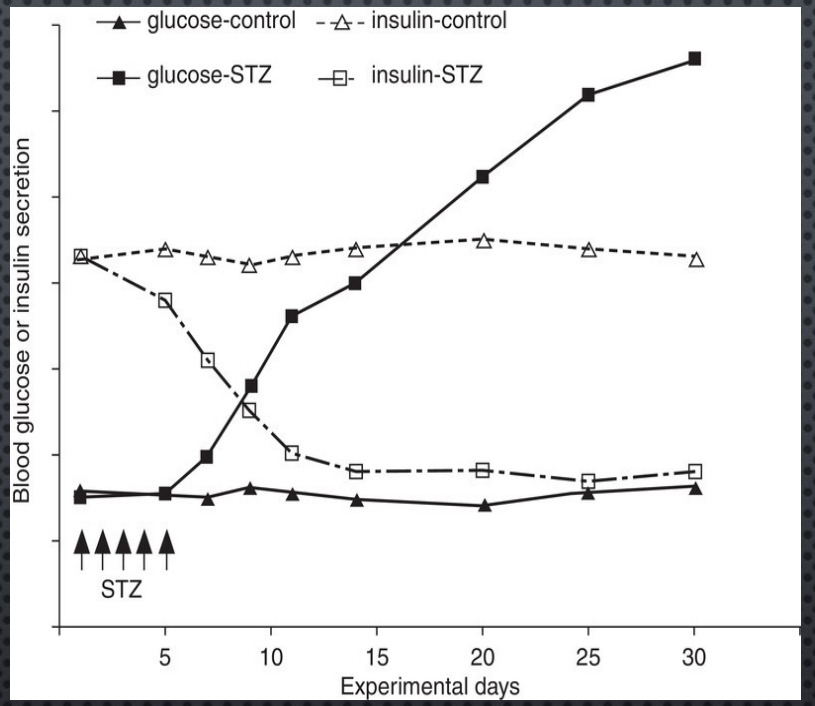


Fig. 2 : Les taux de glycémie et d'insuline par rapport à des témoins

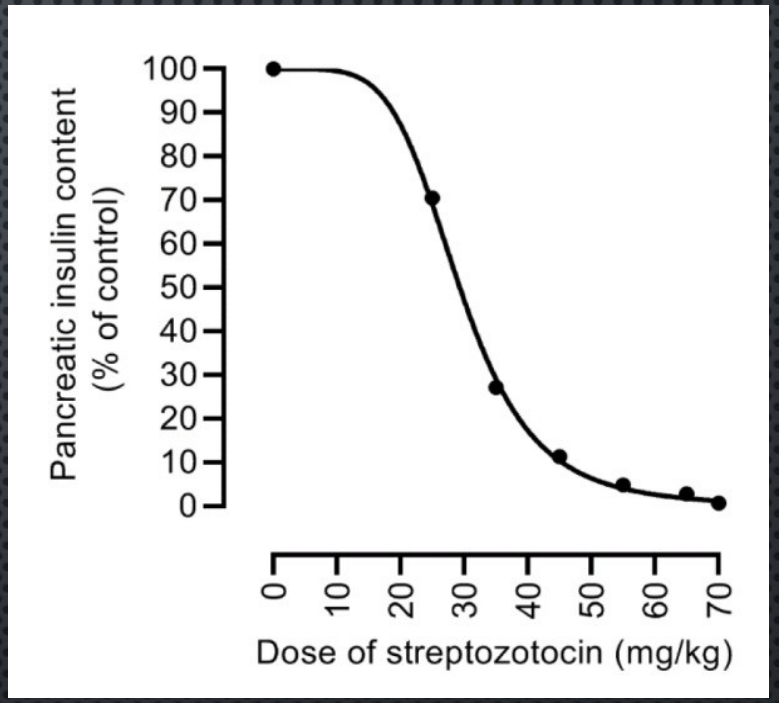


Fig. 3 : contenu pancréatique en insuline en fonction des doses

MODÈLE ANIMAL

CONCLUSION :

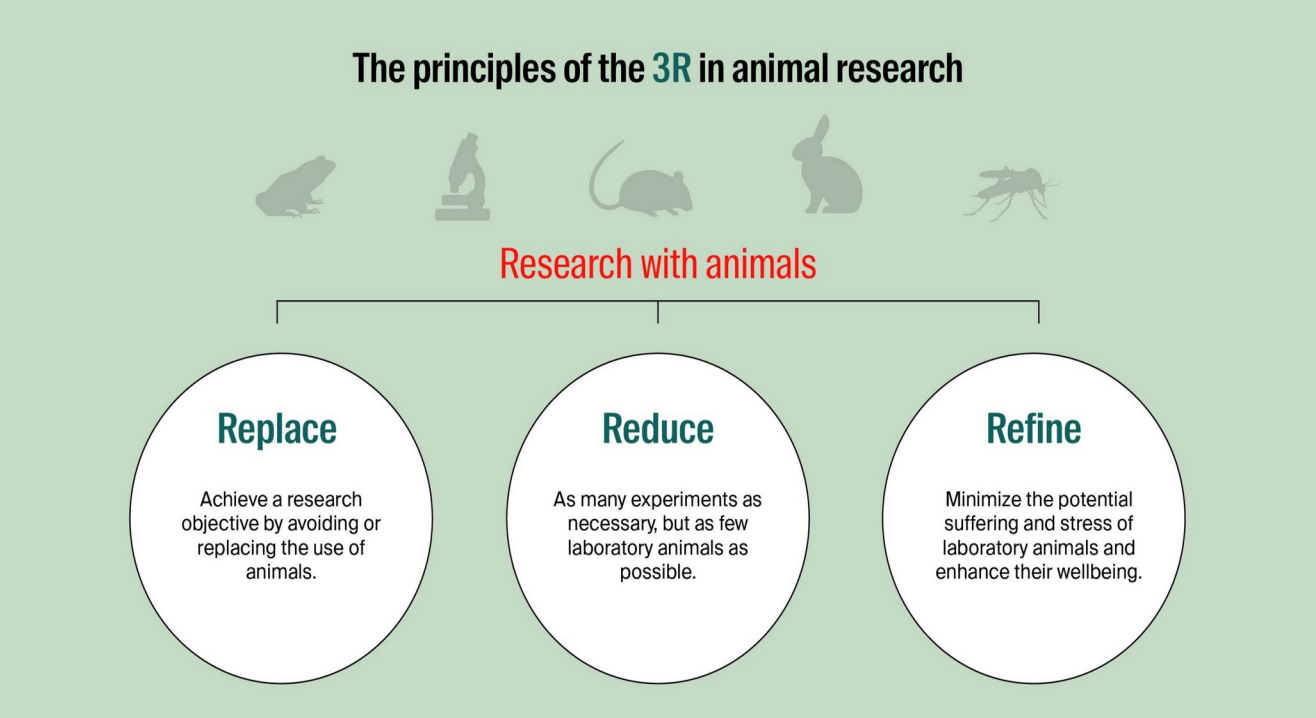

The principles of the 3R in animal research
Research with animals
Replace
Achieve a research objective by avoiding or replacing the use of animals.
Reduce
As many experiments as necessary, but as few laboratory animals as possible.
Refine
Minimize the potential suffering and stress of laboratory animals and enhance their wellbeing.

Fig. 1 : principe des 3Rs

- Par quoi peut-on remplacer l'expérimentation animale pour éviter le recours à l'homme?
- Doit-on l'abandonner définitivement?
- Est-ce que la stratégie des 3Rs est applicable dans la vraie vie?

Les références :

1. Leonardo Bich, Matteo Mossio, and Ana M. Soto. Glycemia Regulation: From Feedback Loops to Organizational Closure. Front Physiol. 2020; 11: 69.
2. Unai Galicia-Garcia, Asier Benito-Vicente, Shifa Jebari, Asier Larrea-Sebal, Haziq Siddiqi, Kepa B. Uribe, Helena Ostolaza, and César Martín. Pathophysiology of Type 2 Diabetes Mellitus. Int J Mol Sci. 2020 Sep; 21(17): 6275.
3. Asghar Ghasemi and Sajad Jeddi. Streptozotocin as a tool for induction of rat models of diabetes: a practical guide. EXCLI J. 2023; 22: 274–294.
4. Jessica E.B.F. Lima, Natalia C.S. Moreira, Elza T. Sakamoto-Hojo. Mechanisms underlying the pathophysiology of type 2 diabetes: From risk factors to oxidative stress, metabolic dysfunction, and hyperglycemia. February–March 2022, 503437
5. Streptozotocin-Induced Diabetes in a Mouse Model (BALB/c) Is Not an Effective Model for Research on Transplantation Procedures in the Treatment of Type 1 Diabetes.
6. Brian L. Furman . Streptozotocin-Induced Diabetic Models in Mice and Rats. 27 April 2021